City of San Diego
Development Services
Building Development Review
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THE CITY OF SAN DIEGO

Building Newsletter 10-2

One-hour fire-resistive corridors

In the interest of uniform interpretation concerning proper fire-resistive protection for corridors, the following examples are recommended. Although numerous variations are possible, almost all situations can be categorically grouped into one of the following twelve example cases.

I. One-hour Fire-resistive Corridors

Section 1005.7 of the Uniform Building Code addresses the subject of one-hour fire-resistive corridor construction as follows: "Construction: Walls of corridors serving a Group R, Division 1 or Group I Occupancy having an occupant load of 7 or more and walls of corridors serving other occupancies having an occupant load of 30 or more shall be of not less than one-hour fire-resistive construction and the ceilings shall be not less than that required for a one-hour fire-resistive floor or roof system."

II. Exceptions

A. One-story buildings housing Group S, Division 2 Occupancies.

B. Corridors more than 30 feet in width where occupancies served by such corridors have at least one exit independent from the corridor. (See Section 404 for covered malls.)

C. Exterior sides of exterior exit balconies.

D. In Group I, Division 3 Occupancies such as jails, prisons, reformatories and similar buildings with open-barred cells forming corridor walls, the corridors and cell doors need not be fire-resistive.

E. Corridor walls and ceilings need not be of fire-resistive construction within office spaces having an occupant load of 100 or less when the entire story in which the space is located is equipped with an automatic sprinkler system throughout and smoke detectors are installed within the corridor in accordance with their listing per Exceptions 5 in Section 1005.7 (Exception 8 requires the entire building to be sprinklered but does not require smoke detectors).

F. In other than Type I or II construction, exterior exit balcony roof assemblies may be of heavy timber construction without concealed spaces.

G. Within office spaces occupied by a single tenant, partial height partitions which form corridors and which do not exceed 6 feet in height need not be fire-resistive, provided they are constructed in accordance with Section 601.5.2.1, do not serve an occupant load of 30 or more, and are not more than three fourths of the floor-to-ceiling height.

III. Construction Requirements for Corridor Walls and Ceilings

A. When the ceiling of the entire story is an element of a one-hour fire-resistive floor or roof system, the corridor walls may terminate at the ceiling. When the room-side fire-resistive membrane of the corridor wall is carried through to the underside of a fire-resistive floor or roof above, the corridor side of the ceiling may be protected by the use of ceiling materials as required for one-hour floor or roof system construction or the corridor ceiling may be of the same construction as the corridor walls.

B. Ceilings of noncombustible construction may be suspended below the fire-resistive ceiling.

C. For wall and ceiling finish requirements, see Table No. 8-B.

D. Duct penetrations through one-hour fire-resistive corridor walls must be protected by combination fire/smoke dampers as specified in UBC Section 713.10 and 713.11. Steel ducts are permissible, however, when the ducts have no openings into the corridor and are a minimum of 26-gauge steel. See Figure 1 and Figure 2 on page 8.

IV. Smoke Detection Requirements for Combination Fire/Smoke Dampers

A. Smoke detection required to activate combination smoke/fire dampers or smoke dampers must be installed within the mechanical duct system as required by the Uniform Mechanical Code, NFPA Standards and the manufacturer's recommendations.

B. Alternatively, area smoke detectors may be installed within the entire corridor system to provide complete smoke detection. The smoke detectors shall be interconnected and wired in a way that the activation of one smoke detector will close all the dampers protecting ducts serving the common atmosphere of the one hour corridor system.

C. The location and spacing of smoke detectors shall result from an evaluation based on the guidelines detailed in the National Fire Alarm Code and on engineering judgement. Ceiling shape and surfaces, ceiling height, configuration of contents, burning characteristics of combustible material present, ventilation, and the ambient environment are some of the conditions that shall be considered.

Index to Cases

Combustible	Noncombustible				Combustible			
Construction Type	I-F.R.	II-F.R.	II, 1-hour	II-N	III-N	V-N	III, 1-hour	V, 1-hour
Fire Rating	Rated			Nonrated			Rated	
Case Number	11, 12	11, 12	11, 12	9, 10	1, 2, 3	1, 2, 3	4, 5, 6, 7, 8	4, 5, 6, 7, 8

Legend to Following Cases

Noncombustible floor or roof framing and sheathing decking.

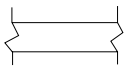
Nonrated wall or ceiling membrane, unless otherwise noted on examples.

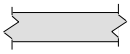
Nonrated suspended ceiling.

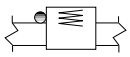
Rated wall or ceiling membrane which is an element of a fire-resistive floor, roof, or wall system.

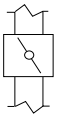
Diffuser or grill without ceiling combination fire/smoke damper.

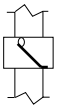
Diffuser or grill with ceiling combination fire/smoke damper.


Duct opening in nonrated wall or ceiling: no combination fire/smoke damper required.

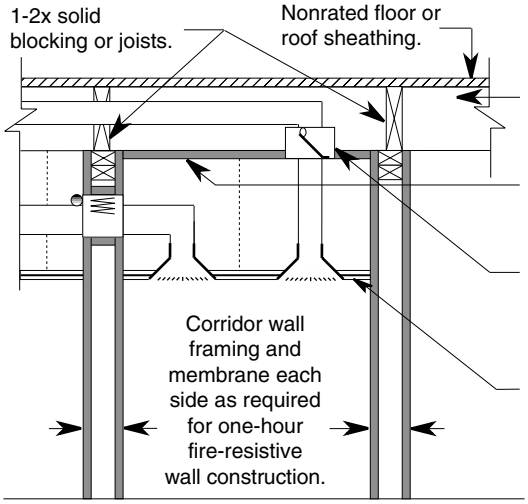

Duct with no openings into rated corridor: no fire/smoke damper required, but must be of 26 gauge steel.


Duct opening in rated corridor wall: combination fire/smoke damper required. A curtain-type fire damper is shown, however, a blade-type is also available.


Duct opening in rated floor, roof-ceiling or floor-ceiling system: combination fire/smoke damper required. A blade-type damper is shown, however, a curtain-type is also available.


Duct opening in rated ceiling system; ceiling combination fire/smoke damper required. A blade-type damper is shown, however, a curtain-type is also available.

Case 1/Applicable to nonrated combustible construction with solid wood joist floor or roof framing



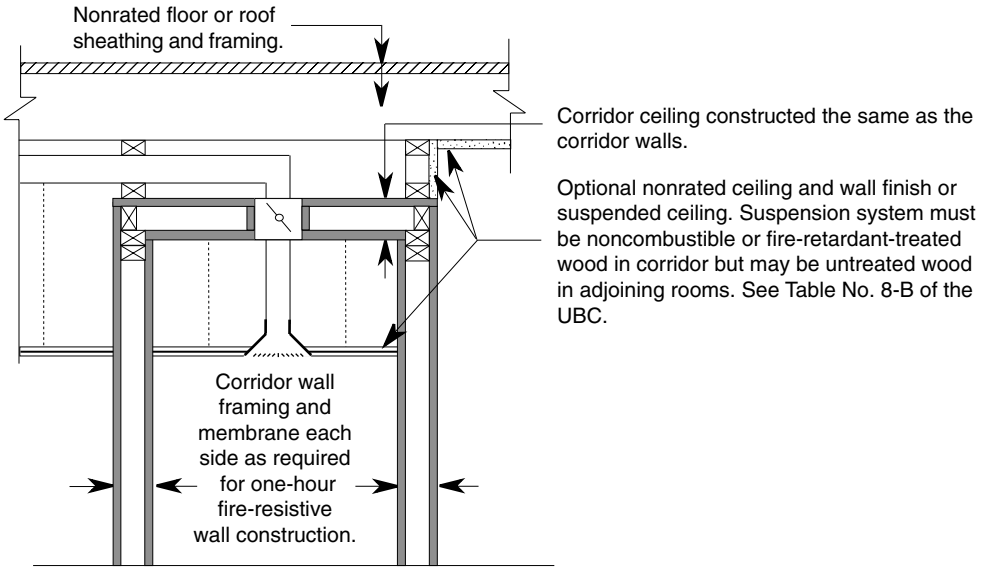
2x joists (must be at 16" max. o.c. per Table No. 7-C of the UBC where supporting one-hour fire-resistive ceiling or provide an approved assembly).

Ceiling membrane as required for a one-hour fire-resistive floor or roof system.

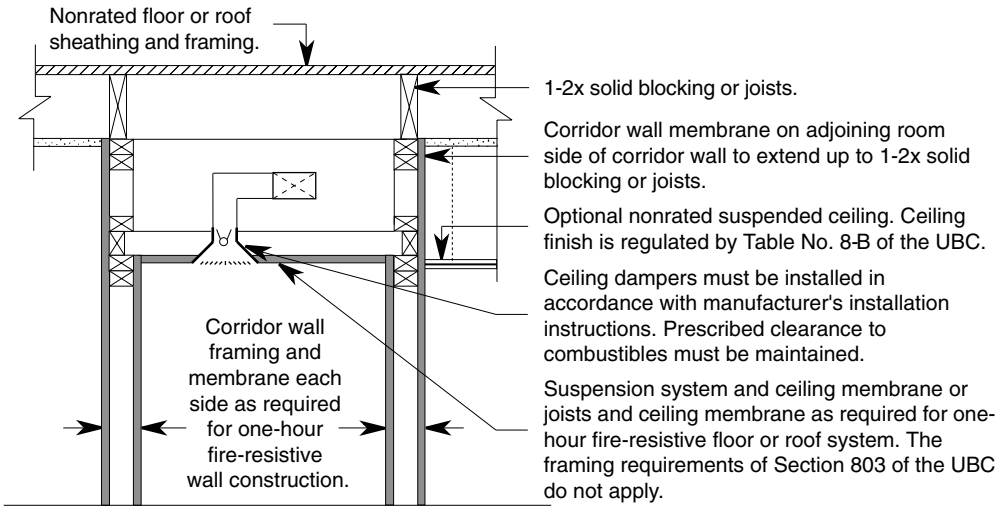
Ceiling dampers must be installed in accordance with manufacturer's installation instructions. Prescribed clearance to combustibles must be maintained.

Optional nonrated suspended ceiling. Suspension system must be noncombustible or fire-retardant-treated wood. Ceiling finish is regulated by Section 803 and Table No. 8-B of the UBC.

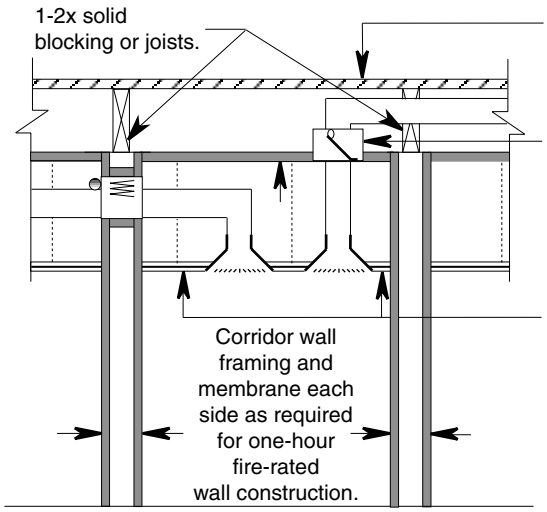
Case 2/Applicable to nonrated combustible construction



Case 3/Applicable to nonrated combustible construction



Case 4/Applicable to rated combustible construction

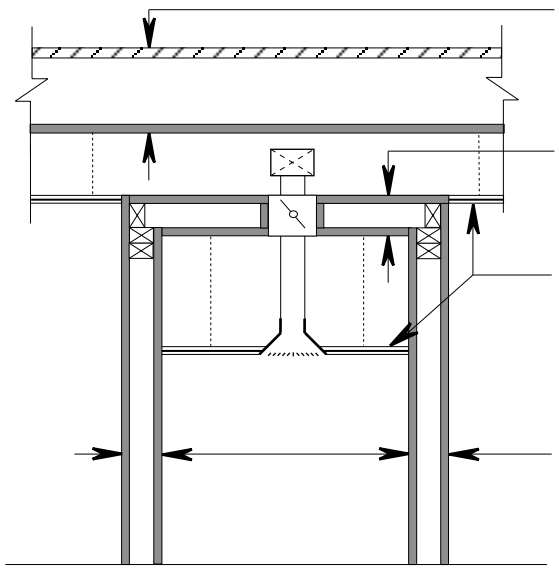


Floor or roof sheathing, framing, and ceiling membrane as required for a one-hour fire-resistive floor or roof system throughout entire story.

Ceiling dampers must be installed in accordance with manufacturer's installation instructions. Prescribed clearance to combustibles must be maintained.

Optional nonrated suspended ceiling. Suspension system must be noncombustible or fire-retardant-treated wood. Ceiling finish is regulated by Section 803 and Table No. 8-B of the UBC.

Case 5/Applicable to rated combustible construction



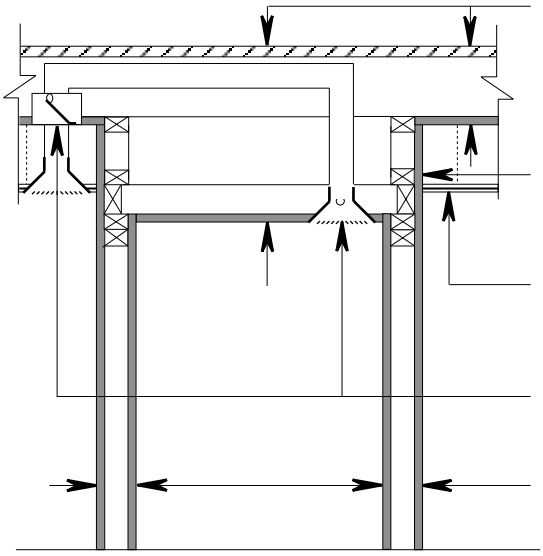
Floor or roof sheathing, framing and ceiling membrane as required for a one-hour fire-resistive floor or roof system throughout entire story.

Corridor ceiling constructed the same as corridor walls.

Optional nonrated suspended ceiling. Suspension system must be noncombustible or fire-retardant-treated wood. Ceiling finish is regulated by Section 803 and Table No. 8-B of the UBC.

Corridor wall framing and membrane each side as required for one-hour fire-resistive wall construction.

Case 6/Applicable to rated combustible construction



Floor or roof system as required for a one-hour fire-resistive floor or roof system throughout entire story.

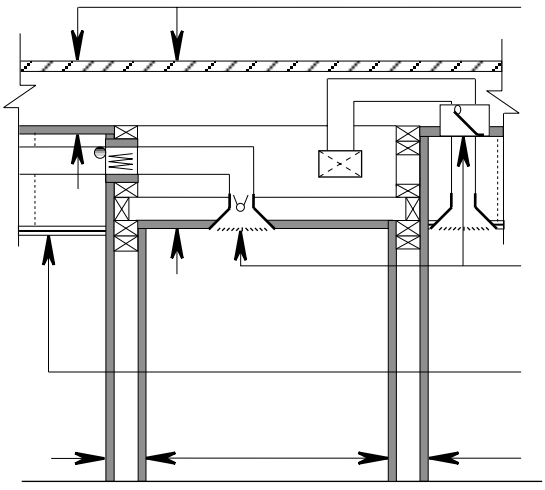
Membrane on adjoining room side of corridor wall must extend up to ceiling membrane of one-hour fire-resistive floor or roof system.

Optional nonrated suspended ceiling. Suspension system must be noncombustible or fire-retardant-treated wood. Ceiling finish is regulated by Section 803 and Table No. 8-B of the UBC.

Ceiling dampers must be installed in accordance with manufacturer's installation instructions. Prescribed clearance to combustibles must be maintained.

Corridor wall framing and membrane each side as required for one-hour fire-resistive wall construction.

Case 7/Applicable to rated combustible construction



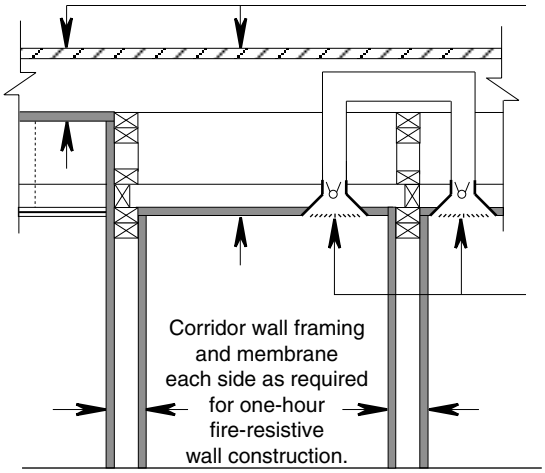
Floor or roof system as required for a one-hour fire-resistance rating throughout entire story. All elements of the assembly must be in strict accordance with Table No. 7-C of the UBC or per a current evaluation report of the International Conference of Building Officials, a current listing in the Fire Resistance Directory of Underwriters Laboratories Inc. or a current listing by another approved agency.

Ceiling dampers must be installed in accordance with manufacturer's installation instructions. Prescribed clearance to combustibles must be maintained.

Optional nonrated suspended ceiling. Suspension system must be noncombustible or fire-retardant-treated wood. Ceiling finish is regulated by Section 803 and Table No. 8-B of the UBC.

Corridor wall framing and membrane each side as required for one-hour fire-resistive wall construction

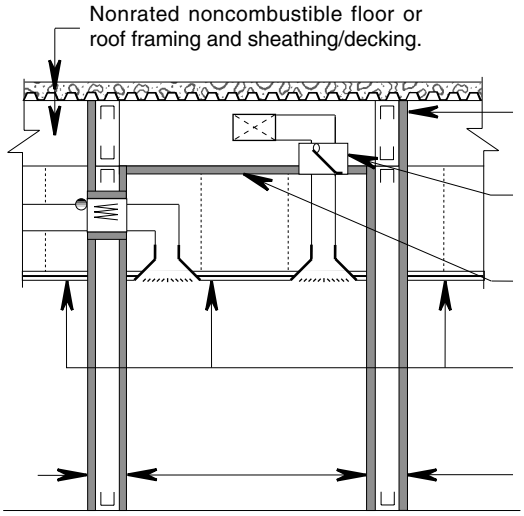
Case 8/Applicable to rated combustible construction



Floor or roof system as required for a one-hour fire-resistance rating throughout entire story. All elements of the assembly must be in strict accordance with Table No. 7-C of the UBC or per a current evaluation report of the International Conference of Building Officials, a current listing in the Fire Resistance Directory of Underwriters Laboratories Inc. or a current listing by another approved agency.

Ceiling dampers must be installed in accordance with manufacturer's installation instructions. Prescribed clearance to combustibles must be maintained.

Case 9/Applicable to nonrated noncombustible construction



Membrane as required for a one-hour fire-resistive floor or roof system

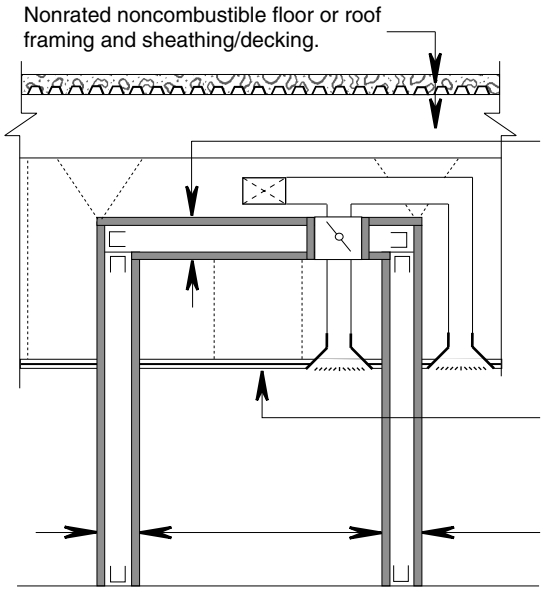
Ceiling dampers must be installed in accordance with manufacturer's installation instructions. Prescribed clearance to combustibles must be maintained.

Ceiling membrane as required for a one-hour fire-resistive floor or roof system

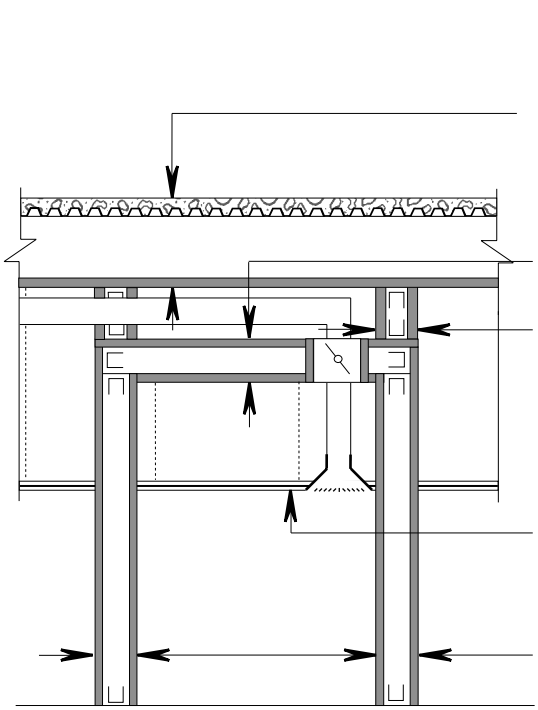
Optional nonrated suspended ceiling. Suspension system must be noncombustible. Ceiling finish is regulated by Section 803 and Table No. 8-B of the UBC.

Corridor wall framing and membrane each side as required for one-hour fire-resistive noncombustible wall construction

Case 10/Applicable to nonrated noncombustible construction



Case 11/Applicable to rated noncombustible construction



Case 12/Applicable to rated noncombustible construction

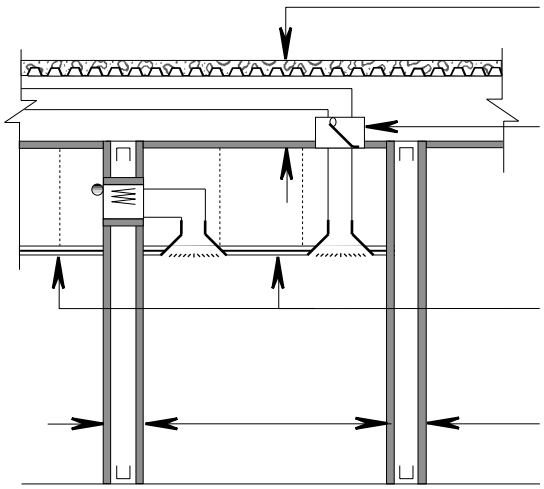


Figure 1/Duct penetration with no openings into corridor itself or enclosed assembly above

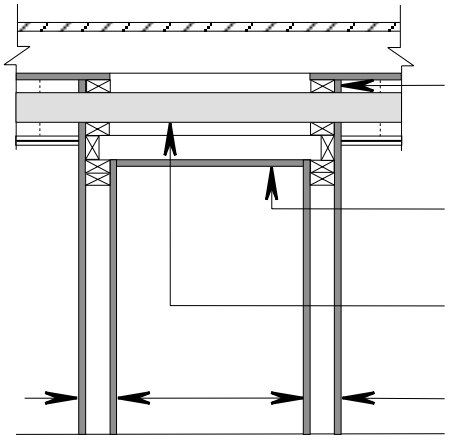
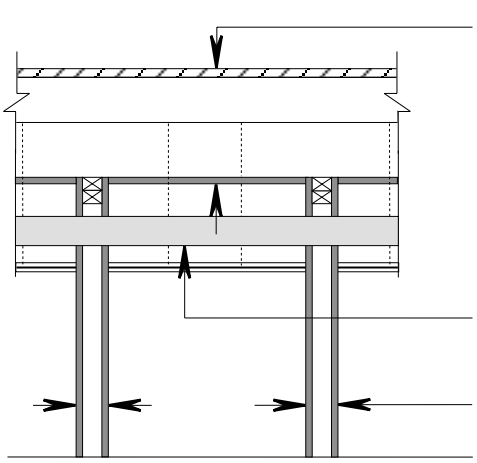



Figure 2/Duct penetration with no openings into corridor above suspended ceiling